

Puntarenas', Oersted; B, n.v.). Pax & Hoffmann (loc. cit.) restricted the name *D. stenosepala* to the Brazilian plant and separated the Central American plant as *D. panamensis*.

In their treatment of the species in sect. *Triphyllae*, Pax & Hoffmann placed *D. panamensis* adjacent to *D. cissifolia*, with which it is indubitably closely related. The leaf characters given in their key are most unconvincing as the Panama plants often have distinctly dentate rather than 'subentire' leaflets. The only characteristics in which Peruvian specimens of *D. cissifolia* appear to differ significantly include longer fruiting pedicels (up to 4 cm long) and calyx-lobes (up to 1.5 cm long as compared to 1 cm for Panamanian specimens).

It seems most reasonable to treat the Central American representatives of this complex as a subspecies of *D. cissifolia*; the South American plants would then fall into subsp. *cissifolia*. It is probable that *D. stenosepala* should also be included in *D. cissifolia*, but until critical comparisons are made no change in its status is suggested.—Grady Webster, University of California, Davis.

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### A REMARKABLE NEW PHYLLANTHUS (EUPHORBIACEAE) FROM CENTRAL AMERICA

During the preparation of a synopsis of the American taxa of *Phyllanthus* (Webster, ined.), it has proven necessary to describe a number of novelties. Among these is a Central American plant which occupies such an isolated position that it deserves special treatment. Although most of the New World species of *Phyllanthus* can be fitted into the classification proposed for the West Indian ones (Webster, Jour. Arnold Arb. **37-39**, 1956-58), there are certain species which definitely do not belong to any of the previously established taxa; these, of course, are the most interesting ones.

The great majority of the woody species of American *Phyllanthus* belong to two subgenera with areolate pollen: *Botryanthus* and *Xylophylla*. However, others belong to the strictly American subg. *Conami*, and a few seem best classified in either the woody subgenera *Kirganelia* and *Emblica*<sup>1</sup> or the mainly herbaceous subg. *Phyllanthus*. The South American species include a number of aberrant taxa which will be given detailed treatment later. In contrast, only a single North American species—the one described below—cannot easily fit into the subgeneric taxa already established. It, therefore, is necessary to create a new section for the species at the same time that it is formally described.

*Phyllanthus* section **Calodictyon**, sect. nov.

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<sup>1</sup>*Phyllanthus* subg. **Emblica** (Gaertn.) Webster, stat. nov., based on *Emblica* Gaertn., Fruct. Sem. **2**: 122, 1790.

Arbuscula monoica, glabra, ramificatione more sectionis *Phyllanthi*; cataphyllae induratae, deciduae; folia magna, chartacea, prominenter reticulata; cymulae axillares, bisexuales; flores calycis laciniis 5, disco ♂ segmentis 3 duplicibus, disco ♀ 5-angulato, staminibus 3, liberis, antheris muticis verticaliter dehiscentibus, granis pollinis subglobosis tricolporatis tectatis perreticulatis, ovario loculis 3, stylis bifidis alte connatis.

Type species: *Phyllanthus tuerckheimii* Webster. The name of the section alludes to the attractive reticulate-veined leaves.

*Phyllanthus tuerckheimii* Webster, sp. nov.—Fig. 1.

Arbuscula monoica, glabra, ramis subteretibus laevibus; cataphylla indurata, brunnea, evidenter decidua, stipulis triangularibus ca 3.5-4 mm longis, crassiusculis, lamina lanceolata; ramuli 12-20 cm longi, 2.2-3 mm diam, subcomplanati angulati, plumbei, laeves, cum foliis 5-10; internodium proximale 2-6 cm; internodia mediana plerumque 1-3 cm longa. Folia stipulis brunneis, induratis,



Fig. 1. *Phyllanthus tuerckheimii* Webster: deciduous branchlet,  $\times\frac{1}{3}$  (Tuerckheim 1085).

subpersistentibus, lanceolatis, ca 3-4 mm longis; petioli 3-4 mm longi; laminae chartaceae,  $\pm$  ellipticae, plerumque 7-14 cm longae, 2.5-5 cm latae, abrupte acutae vel acuminatae, utrinque olivaceae et lucidae, venis venulisque prominenter reticulatis, marginibus planis. *Inflorescentiae* cymosae, cymulis bisexualibus in ramulis axillaribus; cymulae cum floribus pluribus, 2-4 ad eundum nodum. *Flores*  $\sigma$  pedicellis tenibus 5-9 mm longis; lacinae calycis 5, subaequalae, ellipticae vel obovatae, integrae, obtusae, ca 2.5-4 mm longae, 1.5-2.2 mm latae; discus ca 1.5-2.2 mm latus, segmentis 3 bilobis crassis et foveatis; stamina 3, filamentis liberis 0.6-1.0 mm longis, antheris ovatis oblongisve obtusis 0.6-0.7 mm longis verticaliter dehiscentibus; pollinis grana subglobosa, tricolporata, colpibus ad polos convenientibus, exinio crasso perreticulato. *Flores*  $\rho$  pedicellis crassiusculis 6-9 mm longis; lacinae calycis 5, subaequalae,  $\pm$  erectae, ellipticae vel obovatae, 4-5.5 mm longae, 2.5-4 mm latae, reticulate nervatae; discus crateriformis, 5-angulatus, crassiusculus, prominenter foveatus, 2-3 mm latus, 0.6-0.8 mm altus; ovarium laeve; styli connati, columna 2.5-3 mm alta, apicibus bifidis vel bipartitis 0.9-1.2 mm longis gracilibus et patentibus. *Fructus* seminaque ignoti.

Type: Guatemala, Alta Verapaz, Pansamalá, alt 3800 ft, Sept 1886, *von Tuerckheim 1085* (holotype, US 931347; isotypes, US, GH).

This species, known only from the type collection, was determined on the printed labels as *P. grandifolius* L., but this is a double error. The plant was evidently mistaken for *P. grandifolius* sensu Muell.-Arg. non L. (DC., Prodr. **15**(2): 329, 1866), which is the West Indian species correctly known as *P. juglandifolius* Willd. This latter plant, belonging to sect. *Asterandra* in subg. *Xylophylla*, does somewhat resemble the Guatemalan species under discussion in its large reticulate-veined leaves. The massive pitted floral disk in *P. juglandifolius* also recalls that in *P. tuerckheimii* (Fig. 2). However, *P. juglandifolius* is very different in its dilated style-tips, connate horizontally dehiscent stamens, and especially in its areolate pollen grains which are typical for subg. *Xylophylla* and utterly different from the tricolporate coarsely reticulate grains of *P. tuerckheimii*. True *P. grandifolius* L., which does occur in Guatemala, is even more different in its non-phyllanthoid branching and elaborately ramified inflorescences.

The overall configuration of the flowers in sect. *Calodictyon* would place the taxon in subg. *Gomphidium* (Baill.) Webster, a mainly Australasian group of species which approach the genus *Glochidion* in many respects. The  $\sigma$  flowers of *P. tuerckheimii*, with three free vertically dehiscent stamens and a disk of three massive duplex segments, definitely resemble those of various species of sect. *Gomphidium* from New Caledonia and New Guinea; the  $\rho$  flowers, with a crateriform disk and bifid styles, suggest those found in New Guinean species of sect. *Paragomphidium* such as *P. finschii* K. Schum. (except that in the Guatemalan plant the styles are connate). The leaves are much like those of *P. brassii* White, from Queensland, but that species has dimerous  $\sigma$  flowers (4 calyx-lobes and 2 stamens) and free styles. Although the pollen grains of most taxa of subg. *Gomphidium* are similar to those of sect. *Calodictyon* in being tricolporate with colpi meeting at the poles, the unbordered colpi and coarse reticulum of the Guatemalan plant are not matched in any of them.

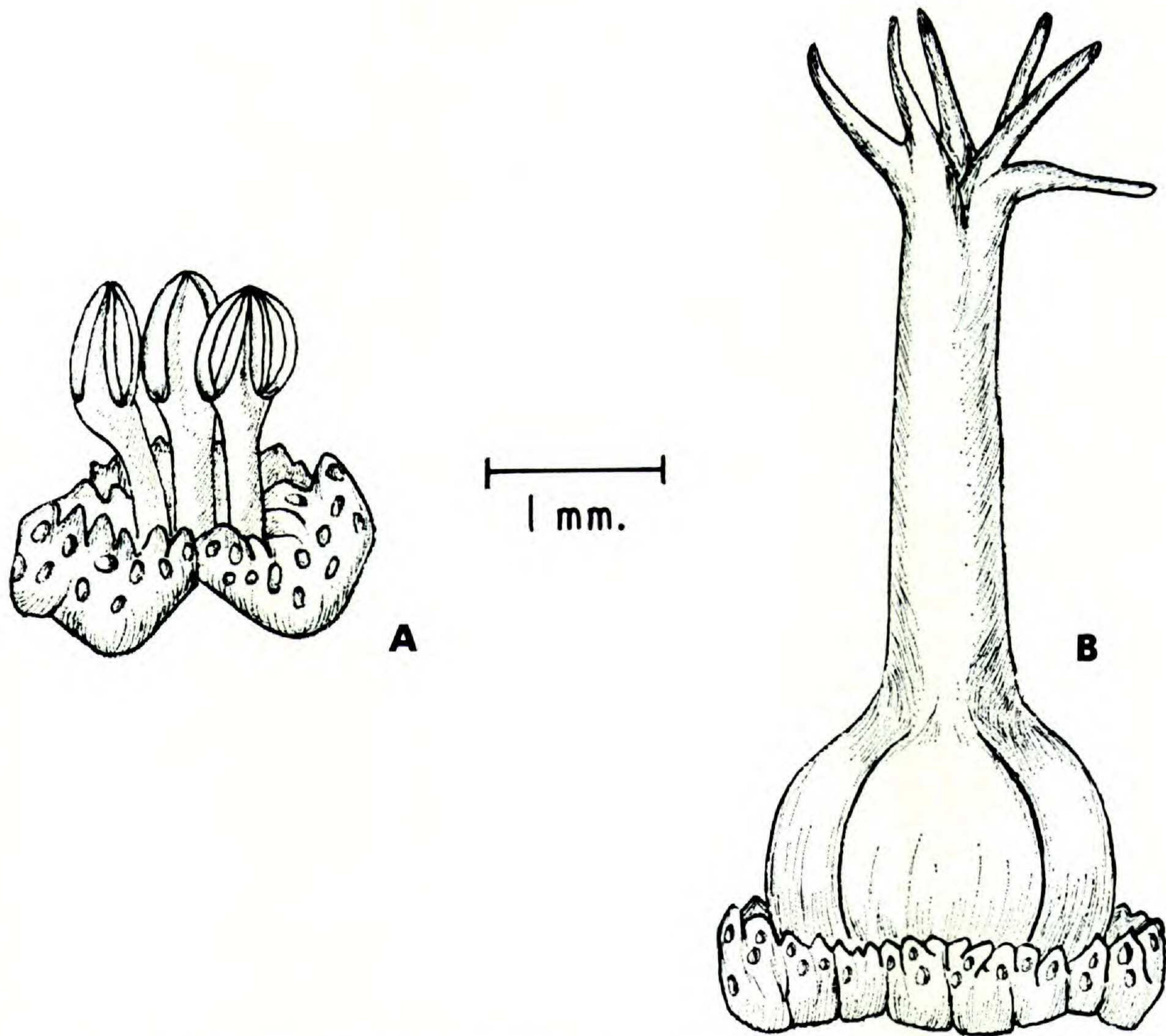


Fig. 2. *Phyllanthus tuerckheimii* Webster: A, androecium and disk of staminate flower; B, gynoeceium and disk of pistillate flower. After Tuerckheim 1085.

On the basis of the totality of characters observed, the similarities of sect. *Calodictyon* with the taxa of subg. *Gomphidium* are so striking that the group apparently must be referred to that otherwise strictly gerontogean subgenus. The only other American taxa of *Phyllanthus* which seem to show possible affinities to subg. *Gomphidium* are the South American species of sect. *Microglochidion*. These plants have an androecium even more *Gomphidium*-like in the apiculate anthers, and some species have entire styles. However, the 6- to 8-colporate pollen grains of sect. *Microglochidion* are very different from those found in sect. *Gomphidium*, and for this reason the South American species seem better placed in subg. *Emblica*, where similar pollen grains occur.

The placement of sect. *Calodictyon* within subg. *Gomphidium* admittedly creates a geographical anomaly, since the subgenus thus becomes one of the few euphorbiaceous taxa which shows an Australasian-Mesoamerican disjunction. However, somewhat similar patterns are exhibited, e.g. by *Sebastiania* (mostly New World but with 1 Fijian species) and *Stillingia* (American except for 2 In-

donesian species). The isolated position of sect. *Calodictyon* within subg. *Gomphidium* suggests that it is probably best regarded as a relict group which has persisted from a time when subg. *Gomphidium* and subg. *Emblica* were much better represented in the New World.—Grady Webster, University of California, Davis.

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### NOTES ON SOME AMERICAN SPECIES OF PHYLLANTHUS (EUPHORBIACEAE)

1. *Phyllanthus abnormis* Baill. var. **riograndensis**, var. nov. ab var. *abnormis* differt ramis et foliis semper dense viscido-scabridulis, glandulis ♀ reniformibus. Type: Texas, Starr Co, 3 mi W of Sullivan City, on sand in open scrub, 2 Apr 1941, *Lundell & Lundell* 9891 (MICH).

This striking variant of *Phyllanthus abnormis* replaces the typical form of the species in the lower Rio Grande Valley (Hidalgo, Starr, and Webb counties), and probably occurs on the Mexican side, although it has not yet been collected there. The laterally expanded disk-segments in the pistillate flower are so characteristic that at first encounter the Rio Grande plant might appear to be a distinct species. However, there is some evidence of intergradation with the glabrous plants which have narrow disk-segments, so it seems best to record this population as simply a local variety.

2. *Phyllanthus longipes* Steyermark, Publ. Field Mus. Nat. Hist., Bot. Ser. **22**: 153, 1940, non *P. longipes* (Wight) Muell.-Arg., *Linnaea* **32**: 11, 1863. Type: British Honduras, El Cayo Distr, Vaca, 13 May 1938, *Gentle* 2619 (holotype F; isotypes MICH, MO). This plant is obviously not a *Phyllanthus*, and seems to represent a distinct species in the genus *Gymnanthes*. It may, therefore, take the name *Gymnanthes belizensis* Webster, nom. nov. Although similar to *G. riparia* (Schlecht.) Kl. and *G. longipes* Muell.-Arg. of Mexico, it seems to be distinct by virtue of its rigid leaves combined with long very slender fruiting pedicels.

3. *Phyllanthus ventricosus* Webster, sp. nov. (subg. *Botryanthus*). Frutex monoicus, ca 3 m altus, ramis teretibus persistentibus, ramulis juvenilibus minute ferrugineo-puberulis sed mox glabris. Folia alterna, chartacea, elliptica, obtuse acuminata, glabra, ca 5-9 cm longa 3-4 cm lata, nervis lateralibus utroque latere ca 7-9 supra inconspicuis subtus prominulis reticulato-anastomosantibus, petiolis ca 1.5-2.5 mm longis, stipulis deltoideo-lanceolatis 0.9-1.1 mm longis. Flores in cymulis axillaribus bisexualibus vel ♂; flos ♀ solitarius; flores ♂ multi (plus quam 25) in quaque cymula. Flores ♂ pedicellis tenuibus ca 5-9 mm longis; laciniae calycis 6 biseriatae, obovatae, integrae, 1.2-1.5 mm longae, 0.7-0.9 mm latae; discus poculiformis, crassiusculus, ca 0.3-0.4 mm altus, 1 mm latus; stamina 3, omnino coalita in columnam ventricosam umbonatum 0.8-0.9 mm altam; antherae ex apice columnae inclinatae, loculis sacciformibus ca 0.5-0.6 mm longis; pollinis grana areolata, areolis polybrochatis. Flores ♀ pedicellis sparse puberulis sed glabrescentibus, ca 4-9 mm longis; laciniae calycis 6 biseriatae, oblongae vel